APLIKASI KANAK-KANAK AUTISME: MARI MENGENAL WARNA BERSAMA ELLY

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BORANG PENGESAHAN STATUS TESIS*

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SESI PENGAJIAN: 2011/2012

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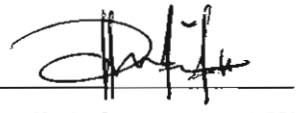

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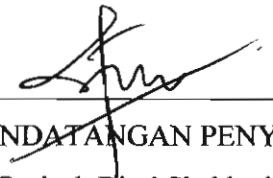

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APLIKASI KANAK-KANAK AUTISME: MENGENAL WARNA BERSAMA ELLY

FATIN FASIHAH BINTI MOHD MOKHTAR

This report is submitted in partial fulfilment of the requirements for the Bachelor of Computer Science (Interactive Media)

FACULTY OF INFORMATION AND COMMUNICATION TECHNOLOGY
UNIVERSITI TEKNIKAL MALAYSIA MELAKA
2011

DECLARATION

I hereby declare that this project report entitled
APLIKASI KANAK-KANAK AUTISME:
MENGENAL WARNA BERSAMA ELLY

Is written by me and is my own effort and that no part has been plagiarized without citations.

STUDENT : _____ Date: 14/7/2011
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SUPERVISOR : _____ Date: 14/7/2011
(DR. FAAIZAH BINTI SHAHBODIN)

DEDICATION

To all autism children, may this project helps and be something enjoyable for your learning process.

ACKNOWLEDGEMENT

Assalamualaikum w.b.t.

First of all, thank you Allah s.w.t for giving me the strength and good health to finish this project in time. Also for His mercy giving us live in peaceful and safe country here in Malaysia. Alhamdulillah..

Secondly, thanks to my supervisor, Dr. Faaizah Binti Shahbodin. I am so grateful to be one of your PSM students. For all your guidance and generosity, giving me advises to improve in mother-like way certainly lessen my stress in order to finish this project.

To mak and abah, thank you for your support and love all this time. Both of you are my inspirations and give great motivation to strive for excellence in my life.

To all my friends, housemates (Bety, Syida, Yanadey, Siti Norfaeza), classmates (Han, Afirah, Wenny, Munirah), thank you for your support.

I love my Creator, my parents, my teachers, and my friends for this beautiful life I have. Thank you so much.

ABSTRACT

As we all know, not all people had born perfect physically and mentally. We should be aware that some of us fated to have disabilities. Those who have mental disability such as slow learner or autism are hard to trace. Luckily there are now symptoms that we can refer to recognize these group. The approach that we have to take in order to handle especially kids with autism is different since they are naturally deficit in communication and social skill. This project develops the learning content plus with short animation as an aid to help educating children with autism in knowing colours. Teaching a simple education like this is not as easy as teaching normal kids without disabilities. Complexity in one page will be strictly avoided as that would distract the focus and the autistic child might end up wandering away from the teaching aid and not learning anything. Other than that, the learning process would only focus at using one sensory input at one time. That would be kind of impossible for autistic children to process multiple sensory input (eg: visual and auditory) simultaneously. This project would have a cheerful colour combination and a simple animation to be easily understood by them. Furthermore, Behaviourism learning theory is applied in this project. Basically, this project is about teaching autistic children in identifying colours. So, hopefully this project would help out teachers in educating and giving better understanding to autistic child.

ABSTRAK

Seperti kita semua tahu, tidak semua orang dilahirkan sempurna secara fizikal dan mental. Kita harus menyedari bahawa ada masyarakat kita ditakdirkan untuk memiliki ketidaksempurnaan atau kecacatan. Mereka yang memiliki masalah kekurangan mental seperti pelajar lambat atau autisme sukar untuk dikesan. Untungnya sekarang ada gejala yang boleh dirujuk untuk mengenali kumpulan tersebut. Pendekatan yang kita harus ambil untuk menangani terutama kanak-kanak dengan autisme adalah berbeza kerana mereka secara semulajadi defisit dalam komunikasi dan kemahiran sosial. Projek ini mengandungi kandungan pembelajaran ditambah dengan animasi pendek sebagai bantuan untuk membantu mendidik kanak-kanak autisme dalam mengenali warna. Ya, mengajar pendidikan yang sederhana seperti ini tidak semudah mengajar kanak-kanak normal yang lain. Kompleksiti di dalam satu halaman muka surat adalah sangat dielakkan kerana ia akan mengalihkan perhatian dan fokus kanak-kanak autisme mungkin berakhir dan teralih jauh dari aplikasi ini. Selain itu, proses pembelajaran hanya fokus dalam menggunakan satu input sensorik pada satu masa. Seperti mustahil bagi kanak-kanak autisme untuk memproses input sensori berganda (contohnya: visual dan auditori) secara serentak. Projek ini akan mempunyai kombinasi warna yang ceria dan animasi sederhana yang akan mudah difahami oleh mereka. Selanjutnya, teori belajar Behaviorisme diterapkan dalam projek ini. Pada dasarnya, projek ini adalah tentang mengajar kanak-kanak autisme dalam mengenalpasti warna. Semoga projek ini akan membantu guru dalam mendidik dan memberikan pemahaman yang lebih baik untuk kanak-kanak autisme.

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INTRODUCTION

1.1 Project Background

This project develops a courseware as a teaching aid to help autistic children in learning colors and for that purpose, the 7 colors of rainbow will be teach through short video. After that, the user's understanding will be tested and evaluated based on their performance in answering a simple quiz.

The awareness to help this group of children from early stage is increasing nowadays. There are already special education and syllabus for them and it will be delivered by experienced trainer with the participation from parents. Other than to be use as the teaching aid in kindergarten or special school, this product also can be use by parents at home.

1.2 Problem Statement

Autism is always used to define the patterns of behavior which the autistic one would have difficulty to interact and communicate with other people including his parents. They are like living in their own world and sometimes act like a deaf and seem to not hear anything said to them. They also either talk or will talk in a strange way. When they were a baby, their parents may recall that their child seldom smile or

ask to be hug and hold. Other than that, they may have done the same action repeatedly.

Autistic child always labeled as dumb, stubborn, weird, selfish, and have the probability to left behind in class. However, it is not surprise for this group of people to be successful more than normal people as Albert Einstein and Bill Gates.

However, the awareness in helping and guiding autistic children out from their own world has increasing nowadays. Action will be done as the symptoms identified by the parents on their child. As these kinds of children deficit in imagination skill, this courseware hopefully would help in enhancing their understanding in learning about colors.

1.3 Objective

Today, the awareness towards the disabilities has been increase. Autism is one of disability where the person with this kind of disability would have problem in communicating with people surroundings and interprets sensory inputs. For that, they need a lot of help and our special attention. The objectives of this project are:

i. To create learning content for autism children to know colors
ii. To measure the functionality, usability and acceptance of user towards this application.
iii. To determine suitable activities which attract autism children attention while learning
iv. To identify the market if this product is published.

1.4 Scope

This learning content will be presented in 2D and developed by using Adobe Flash CS4. The target user for this project is autistic children at the age of 6 to 8 years old and the target client that would buy this product is special education institution and parents. Malay language is the main language used for this courseware. There are 7 colors will be learned by the autistic children which are red, orange, yellow, green, blue, indigo, and violet. A simple quiz will be included in this learning content as a test to evaluate the children's understanding. As for the deliverable tools, this project will be included in CD-ROM as it is a standalone courseware and does not need any network connection and such.

1.5 Project Significance

This product is significant to autistic children, the trainers and parents as this is a teaching aid to ease the learning process of colors. This courseware can guide them in knowing colors which is a basic and fundamental for a child to learn as color is everywhere and used in our everyday life. To develop this courseware, a simple way of cognitive learning theory would be use to avoid any complexity and multi sensory inputs which would distract the mood of autistic children to learn.

1.6 Conclusion

For the conclusion, 'Mari Mengenal Warna Bersama Elly' is a learning content which integrated with a short 2D animation to enhance and increase the understanding of autistic children to learn colors as they are lack of imagination and communication skill.

Adobe Flash CS4 will be use as the authoring tool. There will be simple interaction and easy instruction involves in order to ensure the user's understanding while they are using this courseware.

The next chapter is Chapter II which contains Literature Review and Project Methodology. In that chapter, there will be explanation about the domain, the comparison with the existing products, project methodology, instructional design and project requirement which consist of software and also hardware requirement.

CHAPTER II

LITERATURE REVIEW AND PROJECT METHODOLOGY

2.1 Introduction

This chapter will describe and discuss on the analysis of the existing or similar application which related to this project. The analysis is made by comprehensive review through journals and researches about the available system. There will be comments, evaluation and summary from the previous research that are obtained from secondary sources of data in the area of specific area based on the topic chosen for this project. Furthermore, this chapter also discuss on the domain, specifically on the techniques used.

Methodology is a sequence processes and steps on how the project is developed. The activities that have been taken on every stage of project development will be discussed here on the methodology part. It is the major factor to determine the project success within time and quality as well as how far the project satisfies user requirements. Every stage in the chosen methodology approach consists of different types of tasks and conducted by following its own rules and procedure. It is important to choose the right methodology approaches in developing an application as not any methodology suitable to be applied on all application.

Next is the project requirement description. By identifying all the hardware and software needed for this project to be developed would ease the development process. This would also help developer in finishing the task according to the due date. The milestone and Gantt chart will be prepared.

2.2 Domain

Courseware or e-learning is a new technology which employs electronic media as part of delivery system and encompasses diverse learning strategies and technologies including computer based learning, web based learning, virtual classrooms, and digital collaborations is fast becoming popular all over the world because of its distinctive features (Bashar and Khan, 2007).

A courseware would be such a help and successful better than traditional way of teaching and learning process that conducted in a regular classroom. However, it needs to be done well and fulfill target user requirements and their ability in learning. As the time changes, technology becomes higher and the usage becomes wider. All surrounding people in most environment, either at home, works, and schools, there are technology used to ease human in doing things. Due to the emergence of the technology, courseware is one of the best ways as the new effective approach can be taken in education field. Through courseware, teachers and lecturers can creatively educate student and their understanding would be clearer by the visualization included in it because people learn using seeing senses for 83% (Knoepfli,2004). The content can be suit to people at any age. Fun animation could be use for kids learning and as for disabilities children as autisms, a courseware with simple animation would certainly help them in visualizing what is being teach.

There are many advantages may comes by using courseware as an aid for education. This is supported by Bashar and Khan (2007), that its cost effectiveness, flexibility of learning anytime anywhere, uniform delivery to all users reducing chances of misinterpretations, promotion of team learning and collaboration, and easier access to global community, has given it a competitive edge over the traditional method of learning.

This courseware is specially developed for autistic children to help them in learning about colors.

Autism is a disability which related to the development disability and it is a permanent for an individual who were born with it. It prevents them to interpret

correctly and understand what they see, hear and sense (Ahmad et al., 2010). Autism Research Centre in Cambridge define autism as spectrum of neurodevelopment conditions, characterized by difficulties in the development of social relationships and communication skills and the presence of unusually strong narrow interests, and repetitive behavior. Meanwhile, National Autistic Society (UK) defines autism as a lifelong developmental disability that affects how a person communicates with, and relates to, other people. It also affects how they make sense of the world around them.

It is different teaching a child with autism with non-autism. Autism affects the learning process because children with autism are very hard to learn language and social skills. From ehow.com, there are several ways to teach the autisms which are:

i. Using more visually-oriented content with diagrams and pictures other than words. Flash cards with words mated can be effective
ii. Establish a set routine, and introduce new information within familiar structure. This to avoid them to resist aggressively if the routines upset them.
iii. Some motor skills can be compromise by autism, so we could allow autistic to type answers on keyboard.
iv. Eliminate loud sounds as autistic child may react negatively to loud noise.
v. Using behavior modification techniques by always rewarding good behavior and never punishing aggressive, repetitive or undesirable behavior.

2.3 Existing System

There are already similar applications and prototypes have been made in research of the area of autism learning. This is all due to the awareness of the community to help autistic children to have a happy and healthy life other than helping parents to deal with their child. Below are example and description of the existing applications.

i. Mathematics Courseware For Autism Children (Numbers)

Math for Autism is a courseware prototype developed by Ibrahim Ahmad, Faaizah Shahbodin and Aniza Othman in 2010 for autism children to learn numbers. Figure 2.1 shows some of the interface in the application.

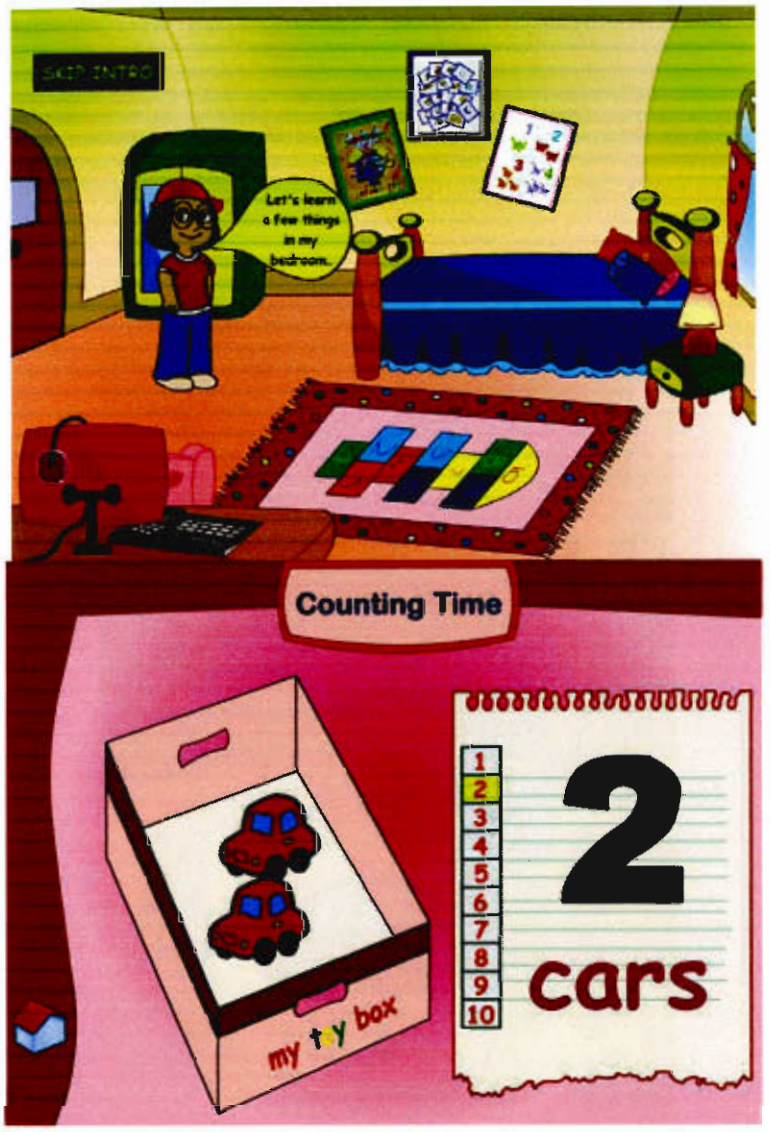

Figure 2.1: Interface of "Math for Autism" (Ahmad et al., 2010)

This prototype has been developed by thoroughly study the requirements of autistic children in learning. The approach used in this application is by integrating drill technique with the Discreet Trial Training (DTT). Assisting children to understand the concept of number, so that they could acquire and apply the basic

skill in mathematics in their life is the objectives of this application. There are 3 modules included in it. They are Module 1: Learning Time, Module 2: Game Zone and Module 3: Sing a song. It is carefully and structurally made to gain the user attention so they interested in interacting with the application and the objective will be achieved. This application prototype is made available in English language.

ii. MyLexics

This is the second example for the existing system. This is also a courseware and it is called MyLexics. You can see the example of the interface in Figure 2.2.

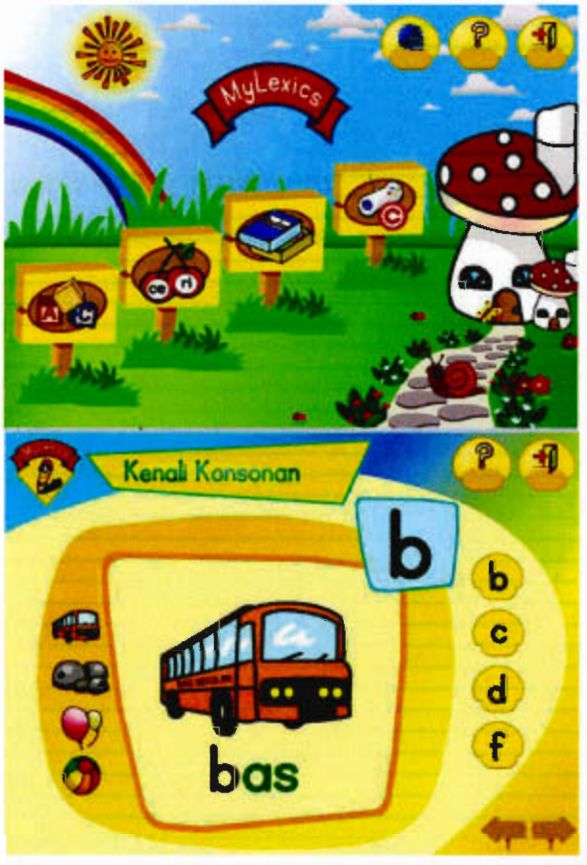

Figure 2.2: Interface of "MyLexics" (Abdullah, Hisham and Parumo, 2009)

This application is purposely developed for dyslexic children who hardly perform and experiencing difficulties in reading, spelling, writing and speaking. The objective of the application is to help dyslexic children to know alphabet and to be able to read and write in Malay Language. This project has involved collaboration

between Universiti Teknikal Malaysia Melaka with Malaysia Dyslexic Association. This application also developed after deep and detail research on dyslexic children ability in learning. There are also three modules in this application which are Alphabet Module, Syllables Module and Words Module. MyLexic was developed based on 'Dual Coding Theory' which suggested that a recall or recognition can be enhanced by presenting information in both visual and verbal form, combine with the Scaffolding teaching strategy, providing assistance to student on a as-needed basis, fading it as the competence increases (Abdullah, Hisham and Parumo, 2009). Scaffolding instruction is defined by Vygotsky as the role of teachers and others in supporting the learner's development and providing support structures to get to that next stage or level (Rachel R. Van Der Stuyf, 2002).

iii. FACELAND

The third example of the existing system is FACELAND. This product is developed specially for autistic children as an assistive application to help them in recognizing facial expression of emotion. Figure 2.3 and 2.4 shows the interface of FACELAND.

Figure 2.3: Interface of FACELAND; The Amusement Park theme (do2learn, 2009)